41. The process of claim 39 wherein the at least one structural element capable of interacting with electromagnetic waves luminesces.

42. The process of claim 39 wherein spacing of the oligo- or polynucleotide structural elements is at least from 8 to 12 nucleotides.

43. The process of claim 1 wherein the sealed reaction chamber means includes (A) at least one multiple-well-containing sheet, each well comprising the sealed reaction chamber and including a probe for the at least one nucleic acid and lyophilized amplification reagents and (B) a sealing sheet cooperating with the multiple-well-containing sheet in a manner independently sealing each of the wells.

44. The process of claim 43 wherein the reagents are fixed and/or stored in at least one water-soluble matrix.

45. The process of claim 43 wherein the reagents are fixed and/or stored in at least one water-soluble matrix that includes a stabilizer.

46. The process of claim 43 wherein the reagents are fixed and/or stored in at least one water-soluble matrix that includes a sugar.

47. The process of claim 43 wherein the reagents are fixed and/or stored in at least one water-soluble matrix that includes trehalose or saccharose.

48. The process of claim 43 wherein the reagents include amplification primers, buffer components, at least one polymerase,

and co-factors.

49. The process of claim 43 wherein the reagents include amplification primers, buffer components, at least one polymerase, and co-factors.

50. The process of claim 43 wherein at least one sealed reaction chamber includes a reagent/probe-containing matrix including hybridization reagents as part of the sealing sheet.

51. The process of claim 43 wherein the sealed reaction chamber means is composed of kit systems.

52. The process of claim 1 including computer-controlled, time-dependent thermostating of the sealed reaction chamber means.

53. The process of claim 1 including optical excitation effecting emitting of a fluorescence signal and optical detection of the fluorescence signal.

54. The process of claim 1 wherein the excitation is by a laser.

55. A means for amplifying at least one nucleic acid comprising (A) at least one multiple-well-containing sheet, each well including a probe for the at least one nucleic acid and lyophilized amplification reagents and (B) a sealing sheet cooperating with the multiple-well-containing sheet in a manner independently sealing each of the wells effecting independent sealed reaction chambers.

56. The means of claim 55 wherein the reagents are fixed and/or stored in at least one water-soluble matrix.

57. The means of claim 55 wherein the reagents are fixed

and/or stored in at least one water-soluble matrix that includes a stabilizer.

58. The means of claim 55 wherein the reagents are fixed and/or stored in at least one water-soluble matrix that includes a sugar.

59. The means of claim 55 wherein the reagents are fixed and/or stored in at least one water-soluble matrix that includes trehalose or saccharose.

60. The means of claim 55 wherein the reagents include amplification primers, buffer components, at least one polymerase, and co-factors.

61. The means of claim 55 wherein the reagents include amplification primers, buffer components, at least one polymerase, and co-factors.

62. The means of claim 55 wherein at least one sealed reaction chamber includes a reagent/probe-containing matrix including hybridization reagents as part of the sealing sheet.

63. The means of claim 55 composed of kit systems.

64. The means of claim 55 including a computer that controls time-dependent thermostating of the independent sealed reaction chambers.

65. The means of claim 55 including an optical unit for excitation effecting emitting of a fluorescence signal and an optical detecting unit for detecting the signal.

66. The means of claim 55 wherein the optical unit is a laser.